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5. Sibling Relationships

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INTRODUCTION

The nature of sibling relationships has been given considerable empirical attention. Research has focused on describing the nature of sibling interaction and roles siblings play in each others' lives, as well as on attempting to support the contention that the sibling relationship can impact children's psychosocial development (Dunn, 1983). The latter purpose has been influenced by two areas: behavior genetics and family systems theory.

Behavior geneticists have proposed that although siblings have roughly half their segregating genes in common, environmental influences operate in a way that makes siblings no more alike than two children chosen at random from the population (Plomin, 1986). Specifically, most environmental influences that affect children appear to be nonshared among family members. Children's psychosocial development, therefore, is influenced mainly by their genetic composition and environmental variables such as peer interactions, sibling treatment of each other, and possibly parental treatment that is those unique to individuals in the same family (Plomin & Daniels, 1987). Rowe and Plomin (1981) stated that interactions between siblings leads to differences between them because they treat each

other differently (i.e., due to their natural style of behavior), and because they can play complementary roles that reinforce the differences between them. Therefore, siblings influence the behavior and development of each other by providing different environments for each other.

Systems theory has also impacted sibling research. Carlson in Chapter 2 of this volume discusses the major tenets of systems theory, and they will not be repeated here. According to family systems theory, siblings constitute a major subsystem of the larger family system (Minuchin, 1985), and as such impact the behavior and development of children. The influence of siblings can be direct (e.g., through sibling-sibling interaction) or indirect (e.g., one sibling's presence can affect parental behavior toward another sibling). All members of a family are interrelated and mutually influential parts of the family unit, and therefore no individual (or set of individuals) should be studied in isolation without considering the influence of other parties.

This chapter is premised on the view that sibling relationships are in fact an important part of children's psychosocial development. The first sections of the chapter review research related to sibling relationships. Various aspects and characteristics of such relationships are discussed, and factors related to relationship quality are reviewed. Given that siblings play a prominent role in children's lives, it is proposed that sibling relationships are of significance to both researchers and clinicians working with and studying children and families. The second section of the chapter therefore addresses strategies for assessing sibling interaction and related measurement issues.

CHARACTERISTICS OF SIBLING RELATIONSHIPS

Researchers have devoted a substantial amount of time to studying various dimensions of sibling relationships. The impetus for much of this research is the amount of time siblings spend together and the finding that studying parent-child dyads while disregarding the influence of siblings is misleading. As a result, additional focus has been placed on studying relationships among all family members, including siblings. This section is a review of relevant literature in the area of sibling relationships. The intent is to provide a concise overview of findings related to how siblings behave with one another, and to show that siblings play an important role in children's social and cognitive development. Specifically, reactions of the firstborn to the birth of a new baby, sibling prosocial and aggressive behaviors,

attachment, caretaking, teaching, and imitation are addressed. Although certainly not exhaustive of all aspects of sibling relationships, these characteristics appear to be most often empirically investigated. Because of sibling influence, clinicians and researchers alike should give serious consideration to the impact of the sibling relationship on children's development and psychosocial adjustment.

Reactions to the Birth of a Sibling

From a systems perspective, a new baby represents a dramatic shift in a family's experience of interactional patterns and affective climate (Nadelman & Begun, 1982). Most of the existing research examines the effects of a newborn in two-child families, that is the effects of the newborn on firstborn children. Although marked individual differences have been noted (Dunn & Kendrick, 1982b), many children exhibit behavior change in reaction to the new family member. Furthermore, firstborn children's relationships with parents are altered upon a newborn's birth. These changes have been found to impact the firstborn child's behavior toward the newborn sibling and toward parents.

Firstborns. There is great variation in the way firstborns react to the birth of the second child. Some exhibit problem behaviors, such as increased crying, clinging, "baby talk," demanding a bottle at night, and problems with toileting (Stewart, Mobley, Van Tuyl, & Salvador, 1987). Some children, however, display no change in behavior or improvements in some behavior problems after the second child's birth (Nadelman & Begun, 1982). For example, some firstborns show an increase in maturity and independence after the birth of a sibling (Dunn & Kendrick, 1982b). The sex of the firstborn may be a mediator, with boys tending to withdraw and girls showing increased dependence (Nadelman & Begun, 1982; Dunn, Kendrick, & MacNamee, 1981).

Mothers. The birth of a second child also represents dramatic shifts in relationships between firstborn children and other family members. Dunn and Kendrick (1980) reported the time mothers spend interacting with firstborn children declines after the birth of a sibling. Additionally, the frequency of unsolicited positive comments about firstborns' actions decreases, whereas confrontations and comments prohibiting the older child increase. These changes appear to impact firstborns' behavior. Increases in confrontation have been associated with increased negative behavior toward the mother, and increased prohibition by the mother has been found to be related to the frequency with which older children irritate the younger sibling (Dunn et al., 1981). Dunn and Kendrick

(1981a) found that females who played frequently with mothers before the birth of the baby exhibited fewer numbers of prosocial behaviors toward the baby. Fourteen months later these babies were less prosocial toward their older siblings. Less prosocial behavior by females was also associated with playful interaction between the mother and the infant. These effects were not found for males. It was proposed that, for males, decreases in maternal attention may affect other family relationships.

Effects of maternal behavior have been found to affect the behavior of older children toward their siblings several months later as well. Dunn and Kendrick (1982a) reported that when mothers spent a high percentage of time interacting with 8-month-old infants, the firstborn was more likely to make negative approaches toward the baby during the course of a mother-infant interaction 6 months later.

Fathers. Although little attention has been given to fathers' involvement and influence on children's behavior following a sibling's birth, fathers' influence deserves attention. Stewart et al. (1987) observed family interactions prior to and one month after infants' births. They found that firstborn children increased behavior directed toward the father and decreased behavior toward the mother. These researchers suggested that fathers may actually compensate for the decreased attention mothers pay to firstborn children by maintaining their levels of interactions with firstborn children. Dunn and Kendrick (1982b) found that conflicts between mothers and older siblings were fewer when fathers were involved in child care. It appears, therefore, that fathers can play an instrumental role in maintaining some balance within the family system upon the addition of a new child.

Long-Term Effects. It has been suggested that the affective quality of sibling relationships initially established may continue into early childhood (Dunn, 1983). For example, Stillwell and Dunn (1985) found links between the first child's initial interest in the newborn and the affective quality of their relationship 4 years later. In contrast, Abramovitch, Corter, and Pepler (1982) found little stability over an 18-month period in their study of preschool-aged firstborn children and their infant siblings. These differences may be due to variations in observational recording techniques (Dunn, 1983). Nevertheless, the continuity that has been observed may reflect the influence of the first child's personality on the developing sibling relationship, or the stability of parental response to the children and the sibling relationship (Stillwell & Dunn, 1985). That is, continuity may be a function of constant personality characteristics of one of the siblings (e.g., emotional intensity), or interactional patterns learned through consistent parental reinforcement of certain sibling-directed behaviors.

Prosocial/Agonistic Behavior Among Siblings

Probably the most widely studied of sibling relationship characteristics are the occurrence and maintaining factors of siblings' prosocial and agonistic behavior toward each other. Researchers have generally observed sibling interactions and coded interchanges as either positive (prosocial), negative (agonistic, aggressive, etc.), or neutral. Results of many such observations suggest that there is a great deal of interaction between siblings that can be classified as either prosocial or aggressive.

Research concerned with prosocial and agonistic behavior among siblings has often centered around determining characteristics of siblings that lend themselves to the absence or maintenance of such behaviors. Some researchers have concentrated on sibling status variables, such as birth order, sex composition of the sibling pair (i.e., same sex or mixed sex), sex of the children, and age interval between the siblings (Abramovitch, Corter, Pepler, & Stanhope, 1986; Baskett & Johnson, 1982; Corter, Pepler, & Abramovitch, 1982; Dunn & Kendrick, 1981b; Dunn & Munn, 1986; Pelletier-Stiefel et al., 1986). Others have suggested that family constellation variables do not account for much variance in sibling behavior (Brody, Stoneman, & Burke, 1987; Brody, Stoneman, & McKinnon, 1986; Brody, Stoneman, & McCoy, 1992; Bryant, 1982; Corter, Abramovitch, & Pepler, 1983). Instead, these researchers promote studying such variables as temperament of the children involved and parental behavior toward the siblings. Aside from looking at the characteristics that predict certain sibling behavior, some researchers have investigated the stability of prosocial and agonistic behaviors in order to learn how sibling relationship characteristics can affect the behavior of the siblings in the long term.

Family Constellation Variables. The majority of research on sibling aggression and prosocial behavior has focused on differences in the frequency with which such behavior occurs as a function of siblings' position within the family. Specifically, researchers have studied whether agonism and prosocial behavior varies systematically with age spacing between the children, sex of both children, whether the siblings are of the same or different sexes, and sibling birth order.

Regarding age interval between siblings, almost all research points to the lack of a consistent relationship between age spacing of siblings and the amount of conflict or frequency of prosocial behavior between preschool-aged children and their infant siblings (Corter et al., 1982; Dunn & Kendrick, 1981b; Dunn & Munn, 1986; Pelletier-Stiefel et al.,

1986). Nevertheless, Minnett, Vandell, and Santrock (1983) and Stocker, Dunn, and Plomin (1989) found more conflict in wider spaced siblings. Differences in findings could be due to methodology. Minnett and colleagues conducted observations with 7- to 8-year-olds in a school setting (versus home observations), with the subjects unaware of being observed and with mothers absent. Stocker et al. (1989) observed siblings during a marble game. A higher proportion of conflict between wider spaced siblings in this study may have been due to the inability of some of the younger subjects (i.e., second-born children in the large interval group) to understand the game. Some self-report studies with relatively older children have pointed to a trend for greater conflict between siblings closer in age (Burmester & Furman, 1990; Furman & Burmester, 1985). It is possible that older children perceive more conflict with siblings who are more comparable to themselves developmentally, because such children may interact more in general, thus increasing the likelihood of conflict.

Sex of the siblings has also been investigated for its relation to sibling behavior. Some researchers have found that males and females differ in their behavior toward siblings. Among firstborn preschool-aged siblings, girls have been found to be more prosocial and nurturing than boys (Abramovitch, Corter, & Lando, 1979; Corter et al., 1982), although these effects may diminish with age of the siblings (Pepler, Abramovitch, & Corter, 1981). Other researchers have found no sex differences in regards to frequency of conflict or prosocial behavior (Baskett & Johnson, 1982, Dunn & Kendrick, 1981b; Dunn & Munn, 1986; Pelletier-Stiefel et al., 1986).

Brody, Stoneman, MacKinnon, and MacKinnon (1985) suggested that observed sex differences in the amounts of prosocial behavior displayed may be the result of different amounts of interaction by children of different sexes, rather than the effects of gender per se. For example, the finding that older females in same-sex sibling pairs are more prosocial than males in same-sex sibling pairs may be due to the general higher rate of interaction among female siblings than among male siblings. Finally, Abramovitch et al. (1979) suggested that global agonism is not related to sex, but that boys more frequently use physical forms of agonism, whereas girls are more verbal in agonistic encounters.

Unlike interval and sex, consistent evidence exists for the effects of sex composition on rates of prosocial behavior and agonism. Specifically, almost all researchers have concluded that same-sex sibling dyads are typically more prosocial and less aggressive than are mixed-sex dyads (Dunn & Kendrick, 1981b; Pepler et al., 1981). An

exception to this is Minnett et al. (1983), who reported that cheating, aggression, and negative behavior were more characteristic of 7- and 8-year-olds in same-sex as opposed to mixed-sex pairs. These differences may be due to the ages of children studied and/or the methodological differences previously discussed.

The effects of birth order on sibling interaction is the family constellation variable most widely studied, and findings in this area are relatively consistent. Older children are typically more prosocial and nurturant than their younger siblings (Abramovitch et al., 1986; Pelletier-Stiefel et al., 1986; Pepler et al., 1981), although between 8 and 14 months of age, younger members increase the amount of prosocial behavior toward their older siblings (Dunn & Kendrick, 1981b). Pelletier-Stiefel et al. (1986) suggested that differences are not due to discrepancies between siblings in cognitive functioning, but rather to relative position in the family. Specifically, these researchers looked at the prosocial behavior and agonism of second-born children when they were the age of the firstborn children at the time of the original study. Firstborns were still higher in their rates of prosocial and agonistic behaviors. Older siblings are also typically more aggressive than their younger counterparts (Abramovitch et al., 1979; Abramovitch et al., 1986).

It appears that, in general, family status variables account for little variability in the affective quality of sibling interaction. The only consistent findings have been that older siblings in the dyad tend to be more prosocial and more aggressive than their younger siblings, and that same-sex dyads are more positive in their encounters. However, these effects may not be due to the status variables per se. Older children may be more prosocial and more agonistic than their younger counterparts simply because their repertoire of social behaviors is larger than that of the younger sibling. The higher frequency of positive behaviors among same-sex siblings may be in part a function of more interaction between these siblings than those of different sexes, which may lend itself to more prosocial behavior. Conversely, it could be that siblings who are more prosocial want to interact more with each other. Many researchers have espoused the view that the key to understanding the marked individual differences in prosocial and aggressive behavior lies not in family status characteristics, but in personality of the individual children and in parent behaviors toward the siblings (Brody & Stoneman, 1987; Dunn, 1988).

Temperament and Family Environment Variables. Because there are such marked individual differences in the behavior of sibling pairs,

one possible source of variability is the temperaments of the children involved (Brody & Stoneman, 1987; Dunn, 1988). Brody, Stoneman, and Burke (1987) suggested that sibling dyads including an active, emotionally intense or nonpersistent child are more likely to experience high rates of agonistic behavior. Additionally, these researchers suggested that if both siblings display these temperamental characteristics, an even greater amount of conflict may be evidenced. Conversely, a buffering effect may be noted if only one of the children is active, emotionally intense, or nonpersistent. Although temperament is beginning to receive recognition as a correlate of sibling aggression, research concerned with temperament's relation to the occurrence of prosocial behavior is lacking.

Because sibling interaction occurs in the larger family context, it is important to study parental behavior and influence on the interaction between siblings. Research that has systematically studied parental influence generally has focused on three issues, including the effects of parental presence/absence on quality of sibling interaction, parental response to conflict between siblings, and differential treatment of siblings by parents.

Regarding parental presence, research consistently has shown that siblings get along better when mothers are absent rather than present. Corter et al. (1983) found during home observations that sibling prosocial behavior was lower in the mother's presence, and in a laboratory study young siblings were found to be more aggressive when mothers were present (Corter et al., 1982). Additionally, reports by mothers agree with observations. Corter et al. (1983) found that 72% of mothers reported that their children were more prosocial when they were absent. Corter et al. (1982) suggested that this phenomenon may be due to several factors. First, it is safer for younger children to fight back in the mother's presence. Second, a greater demand for self-control is placed upon children in the absence of adult supervision. Third, negative behavior in the presence of the mother may serve to maintain her attention, thereby reinforcing aggressiveness.

A second parental variable that has been studied is parental response to conflict. The main conclusion reached thus far is that there is a definite link between parental response to conflict and frequency of conflict (Brody & Stoneman, 1987; Brody, Stoneman, & Burke, 1987; Stocker et al., 1989), yet the direction of these effects is not yet clear (Dunn, 1988). For example, Dunn and Munn (1986) suggested that maternal involvement in conflict was associated with an increase in frequency of quarrels, but that children whose parents intervened

also showed more mature conflict-resolving strategies (e.g., conciliation, reference to social rules) than did children whose mothers did not intervene. Regarding types of parental involvement, Brody et al. (1986) found that when mothers reportedly used non-punitive child rearing practices, older siblings were less agonistic toward their younger siblings, suggesting that child rearing practices used by parents may affect the development of prosocial orientations in children. Correlations also have been found between maternal discussion of the feelings and needs of one sibling with the other and later friendly behavior by both siblings (Dunn & Kendrick, 1982a).

The most extensively studied area of parental involvement and influence has been differential treatment of siblings. Some research has focused on attempting to determine if parents are discrepant in their treatment of siblings, whereas other research has been concerned with the effects of differential treatment on the quality of sibling relationships.

Many studies have shown that parents are relatively consistent in their treatment of first- and second-born children (Abramovitch et al., 1982). For example, Dunn and Kendrick (1982b) found that mothers who are playful with their oldest child also tend to be playful with the second born. However, some inconsistencies have been found as well. Bryant (1982) found that firstborn siblings in middle childhood receive a fair amount of attention when alone with their mothers, but are relatively neglected when both children are present. Other research has suggested that second-born children receive more attention than older children (Brody, Stoneman, & Burke, 1987; Brody et al., 1992). Dunn and Kendrick (1981b) found that mothers interacted more with their second-born children only if the younger child differed in sex from the firstborn child.

Research that has centered on the effects of differential parental treatment on sibling relationships generally has shown that differential treatment by parents is correlated with frequency of sibling conflict (Dunn, 1988). It has also been suggested that ill will by siblings is evidenced by both children, not only by the child who receives less parental attention (Bryant & Crockenburg, 1980). The effects of differential treatment have far-reaching implications. Stocker et al. (1989) suggested that children's realization that they are treated differently from their siblings and their reactions to this realization may affect a child's well-being and development. It has also been found that perceived differences in parental behavior toward the siblings is associated with emotional adjustment differences among adolescent siblings (Daniels, Dunn, Furstenberg, & Plomin, 1985).

There is evidence for the stability of sibling behavior patterns toward each other, both in terms of prosocial and aggressive behavior. Regarding prosocial behavior, Stillwell and Dunn (1985) found considerable stability over a 3- to 4-year period. Stability is true especially for the older sibling in a dyad (Dunn & McGuire, 1992). Younger siblings have been found to increase amounts of prosocial behavior by age 6 to 8 (Vandell, Minnett, & Santrock, 1987).

Additionally, the reactions of young siblings to the prosocial initiations of older siblings change as later-born siblings grow older, in that such initiations become less welcome. This may be due to the later-born children requiring less nurturance and direction from older siblings as they become more independent and competent (Burmester & Furman, 1990).

More important from a clinical standpoint is the stability and significance of aggressive behavior patterns. Stability in agonistic and conflictual relations has been evidenced over time (Dunn, 1983). Aggressive behavior at home has been associated with aggression among peers in a preschool setting (Berndt & Bulleit, 1985). Furthermore, sibling aggression has been associated with later behavior problems of children (Dunn, 1988; Stillwell & Dunn, 1985). Patterson (1984) reported that coercive behavior by siblings plays a role independent of that of parents in the development of coercive behavior of children. Stillwell and Dunn (1985) concluded that if aggressive behavior does indeed show stability over time, then siblings' influence on aggressive behaviors of children should be seriously considered.

Attachment and Caretaking

Research shows that younger siblings often display the same types of attachment behaviors to their siblings as are typically shown to primary caregivers. Although researchers have not claimed that siblings are the primary attachment figures for infants, related investigations have shown that young children can show attachment behaviors to older siblings as well as to parents. Samuels (1980) claimed that because older siblings, like mothers and fathers, are constant features of infants' social environments, their absence may be disruptive to infants' behavior.

There is a great deal of evidence for attachment characteristics in the sibling relationship. In a laboratory study, Lamb (1978) observed that infants monitored the whereabouts and activities of their preschool-aged older siblings and attempted to maintain proximity to them. Infants have been observed to show signs of distress at the

absence of their older siblings (Dunn, 1983; Samuels, 1980), to greet them with pleasure (Dunn, 1983), to use older siblings as a secure base for exploration (Stewart, 1983), and to go to their older siblings when upset (Dunn & Kendrick, 1982a).

One reason attachments may develop is that older children display many of the same caretaking behaviors as parents. Although sibling versions of caretaking behaviors are rudimentary and differ in style from those of parents (Bryant, 1982), older children often assume roles that resemble those of parents, such as providing positive, supportive care and showing physical affection (Pelletier-Stiefel et al., 1986).

Stewart (1983) found in a laboratory study that when parents left the room and infants appeared distressed, many older siblings made attempts to comfort the infant by hugging them or distracting them. This form of supportive caretaking was found to occur more by older sisters than older brothers in mixed-sex sibling dyads. Older brothers did not typically respond with caretaking behaviors toward their younger sisters, but older sisters tended to "smother" their younger brothers. This suggests that, although siblings may make attempts to comfort, they are not as attuned to how to go about it as are parents and other adults.

Teaching

Siblings also can be a source of instruction for children. It has been found that young children learn more effectively if taught by someone close to their own age, and that individuals can learn through the process of teaching someone else (Cicerelli, 1976). Siblings are in a good position to teach and provide modeling and reinforcement for each other, due to a great deal of opportunity to interact.

Research on teaching behavior by siblings has shown, not surprisingly, that older children typically assume the teacher role, whereas younger siblings assume the learner role (Minnett et al., 1983; Stoneman, Brody, & McKinnon, 1984). Because it has been found that people learn from the process of teaching, it is likely that both older and younger siblings in a dyad profit from such instructional interactions.

Regarding sex of the siblings, it appears that older females in a dyad tend to teach more often than do older males (Brody et al., 1985; Cicerelli, 1976). This may be because females are often delegated more caretaking responsibilities than are males, and/or because girls identify more with mothers and female teachers, which influences them to take on roles similar to these prominent adults (Cicerelli,

1976). In addition, younger females in a dyad assume the learner role more often than do young males. Brody et al. (1985) suggested that if younger females are more socially engaging and attentive, older siblings would be more likely to attempt to teach than they would with boys, whose temperaments often make them difficult to instruct.

Imitation

Aside from direct teaching, siblings can learn from each other through imitation. For example, Lamb (1978) suggested that one way infants learn is by repeating a behavior shortly after an older sibling has done it. Research in this area has focused mainly on how sibling status variables affect the observance of imitative behaviors in sibling dyads.

Most research has looked at imitation as a function of birth order, sex, and sex composition of the sibling dyad. Regarding birth order, researchers have unanimously agreed that younger siblings imitate more frequently than older siblings in a dyad (Abramovitch et al., 1979; Dunn, 1983), although Abramovitch et al. (1979) reported that 20% of imitative behaviors were displayed by firstborn children. Although older siblings may not be as prone to imitate younger siblings, these findings suggest that many are interested in the behavior of their younger siblings.

Investigators have not found sex effects on the frequency of imitation by younger siblings (Abramovitch et al., 1979; Abramovitch et al., 1982), but sex composition appears to play a role. Specifically, imitation is observed to occur more in same-sex than mixed-sex sibling pairs. Abramovitch et al. (1982) found that imitation decreased in mixed-sex pairs from the time the younger siblings were 18 months until they were 36 months old. These researchers suggested that the younger siblings may have begun to perceive the older sibling as different, and thus decreased their imitation.

Summary

In conclusion, there is a large body of evidence to suggest that the sibling relationship in childhood is multifaceted and potentially important to children's psychosocial development. Siblings' births may bring about behavior change in firstborn children. Additionally, the quality of the initial relationship may well be related to the quality of the relationship years later. Associations have been found between hostility in the sibling relationship and later adjustment problems of children. Children can develop attachments to their siblings, and

many display caretaking behavior. Finally, siblings can be a source of teaching and learning for each other, both in terms of direct instruction and imitation.

Although siblings may not be considered the main influence on a child's development, they play an important part in children's lives. Parent-child relationships, although certainly important, do not present the entire picture of a child's family environment. It is also necessary to investigate how sibling relationships mediate parent-child relationships and vice versa. The assessment of sibling relationships is therefore a necessary practice for both researchers and clinicians.

ASSESSING SIBLING RELATIONSHIPS

Researchers have used a variety of methods to collect information about sibling relationships. Parents often serve as a source of information through interviews and various behavior rating scales and checklists. Children themselves, especially those in middle childhood and adolescence, can provide interview and checklist data. Additionally, direct observations of the interactions among various family members can yield a relatively objective perspective on the actual behaviors being displayed by siblings and other family members. The following is an overview of several of the more frequently used methods of measuring sibling relationships. Because each type of measure has unique strengths and weaknesses, it is suggested that the best estimate of the sibling relationship can be gained from multimethod assessment that draws on the perspectives of multiple parties.

Observations

Observations of sibling interaction are the most commonly used method of studying how siblings relate to each other, especially when subjects are young children. Though generally similar in purpose, there is variation among studies in how observations are actually implemented. Points of departure include behaviors or aspects of behavior observed, parties chosen as targets of observation, places at which observations are conducted, types of situation observed, and how collected information is described.

Behaviors to Observe. The selection of behaviors to observe depends in part on the topic of study. For example, many investigators have observed positive and negative behaviors of siblings in order to determine affective quality of the relationship (Abramovitch et al., 1982; Baskett & Johnson, 1982; Dunn & Kendrick, 1981b; Minnett et al., 1983; Stillwell & Dunn, 1985). On the other hand, studies of sibling

attachment behaviors focus on behaviors such as the distance an infant is willing to travel from the mother when an older sibling is present (Samuels, 1980), and comforting behaviors emitted by an older sibling when the mother leaves or a stranger enters a situation (Stewart, 1983). Furthermore, there is often some disparity in terms for selected sets of behaviors to be assessed, even among studies purporting to measure similar constructs. For example, positive physical approaches have been termed "physical affection" (Abramovitch et al., 1982), "positive affiliative touch" (Minnett et al., 1983), and "touches affectionately" (Dunn & Kendrick, 1981b). These terms may or may not imply the same behaviors, therefore results of different studies are difficult to compare. Additionally, a construct such as positive or prosocial touch implies at least some degree of inference on the part of the observer, again making cross-study comparisons questionable.

Because most investigators have been interested in interactions between siblings rather than isolated behaviors of children, it has been necessary to employ a system for coding sibling responses to certain child behaviors. Abramovitch et al. (1982), for example, observed child responses to agonistic behavior (e.g., submit, counterattack, no response) and child responses to prosocial behavior (e.g., positive, negative, no response). Depending on how many steps in an interactional sequence the investigator/clinician wants to observe, additional categories of behavior may be necessary (e.g., a child's response to a sibling's counterattack).

Who to Observe. Although it is intuitively appealing simply to observe dyadic interactions between siblings, more information may be gained by including additional family members in the observation. Because interactions between siblings are indirectly impacted by interactions among other family members, it can be helpful to include those such as parents as part of the observation process. For example, Dunn and Kendrick (1980) looked at dyadic interchanges between siblings with mother present and with/without the father present. Such participant variation gives a clearer idea of how sibling interactions are influenced by third parties and family dynamics. This information is essential for researchers, as well as for clinicians attempting to design family-centered interventions.

Where to Conduct Observations. Observations have been conducted in homes (Abramovitch et al., 1982; Brody et al., 1986; Berndt & Bulleit, 1985; Dunn & Kendrick, 1982b; Stillwell & Dunn, 1985), laboratories (Lamb, 1978; Stewart, 1983), and classrooms (Minnett et al., 1983). Discrepant results of sibling relationship studies may well

be due to places in which observations were conducted. Lamb (1978) found a much lower rate of interaction between siblings in his laboratory study than have been found in observations conducted in homes. Several factors may contribute to a lowered rate of interaction in a laboratory setting, including the unfamiliarity of the situation, the brevity of observation sessions, and large arrays of novel toys that may distract the siblings from one another (Abramovitch et al., 1982). Despite similarities between laboratory and classroom contexts, Minnett et al. (1983) did not find a lowered rate of interaction in classroom observations. This is possibly because the siblings in the classroom setting were involved in structured tasks.

The most appropriate place in which to conduct observations may partly depend on the types of behaviors to be observed. For example, Dunn and Kendrick (1982a) discussed observations of young children's ability to respond to the feelings of their infant siblings and react appropriately. These authors suggested that in order to see these types of behaviors, children must be studied in situations involving familiar people and familiar situations. Additionally, if the investigator is studying the pattern of family influences on children, it is important to conduct observations in the home (Dunn & Kendrick, 1982a).

Situational Variables. There are several other variables that can be incorporated into an observation of sibling interactions. For example, the researcher/clinician needs to decide whether to conduct unstructured or structured observations, or a combination of both. It may be helpful to vary the situation in order to learn how siblings relate in different situations.

Unstructured or naturalistic observations generally involve instructing the family to ignore the observer and engage in normal activities. Depending on whether triadic interactions involving the mother or father are the focus, observers may instruct parents to refrain from purposely interacting with the children being observed. Additionally, though not completely unstructured, investigators may ask the children to engage in some specific task that is representative of typical shared activities between siblings. Brody et al. (1986) instructed children to watch television, play a board game, and play a construction task. These are activities in which siblings are commonly engaged.

Investigators may want to learn about how siblings relate to one another under certain circumstances. For example, Minnett et al. (1983) observed in unstructured situations, as well as during cooperative and competitive tasks. These researchers asked siblings to wrap a package together (cooperative task), and to play a card

tossing game, for which the objective was to toss the most cards into a basket (competitive task). Obviously, there are many other situations that can be manufactured by an observer interested in specific aspects of the sibling relationship (e.g., teaching, conflict resolution).

Somewhat related to level of structure in an observation is whether the observer will provide or restrict access to toys during an observation period. Berndt and Bulleit (1985) brought a toy set to subjects' homes in order to facilitate interaction. As suggested by Abramovitch et al. (1982), however, having novel toys in the situation may distract siblings and decrease interaction. An additional point about toys should be considered. Corter et al. (1982) studied the effects of having one toy versus four toys in an observation session. Although it would seem that four toys would be sufficient to satisfy both children (i.e., they would not be forced to share), these researchers actually found more agonistic behavior in the four-toy condition. They concluded that having four toys increased the opportunity for negative behavior. It is possible that in a situation with many novel toys, an increase in negative interaction that is an artifact of the number of toys, rather than indicative of a general pattern of interaction, may be noted.

The final point about observations to be made here is the use of verbal behavior as data. Although many investigations observed only nonverbal behavior, including verbalizations may give additional information. This may be especially true as talk begins to constitute a larger part of children's total interactions. Some researchers (e.g., Abramovitch et al., 1986) have audiotaped interactions and coded the verbal behavior. Stillwell and Dunn (1985) coded utterances made by children to their mothers about the sibling, and subsequently coded them for their affective tone. As children become older, it may become more important to capture verbal behavior in order to get a more complete picture of the types and quantity of sibling interactions.

Interviews

Another common method of measuring sibling relationships is interviews. The overwhelming majority of these interviews are conducted with mothers, and only occasionally with fathers. Parental interviews can be conducted in person or via telephone. One study (Stillwell & Dunn, 1985) included interviews with children themselves, although this is rare.

Parental interviews. Interviews with parents are valuable for several reasons. First, they provide investigators/clinicians with information concerning sibling interactions in situations other than those in which the observer is present. Second, it is helpful to have

information from a variety of sources. Finally, such data provide information about parents' perceptions of their children's relationships. This is often essential information, because parental perceptions themselves may be indirectly related to the quality of sibling relationships.

Interviews with parents generally involve questioning parents about their perceptions regarding certain aspects of their children's behavior toward each other. Stillwell and Dunn (1985) inquired about children's aggression toward their siblings, sharing between siblings, and the quality of the child's relations with his/her sibling. Dunn, Stocker, and Plomin (1990) focused on affection, comforting and concern, helping and teaching, caretaking, aggression, competing, jealousy with mother and with father, time spent together, playing together, pretend play, and quarrels in their maternal interviews.

Another variation of interviewing parents was undertaken by Gottlieb and Mendelson (1990). These researchers studied factors that facilitate the adjustment of a firstborn female child to the birth of a newborn sibling. Among their hypothesized variables was parental support of the firstborn. Parents were contacted by telephone at various times to ask about supportive behaviors directed toward their daughters. Although these investigators did not directly inquire about sibling relationships, this type of data could be a very rich source of information. Specifically, when parents are contacted at several points, the responses given may reflect perceptions of the sibling relationship based on recent occurrences, whereas a single home interview may yield either a parent's global or overall view of the sibling relationship or a view clouded by other factors (e.g., how the parent's day went). If the latter is true, having multiple contacts with parents may lead to an "averaging" out of such extraneous factors. Although this type of information does not have to be gathered by telephone, such a method may be the most economical way to collect the data.

Child interviews. As previously mentioned, the majority of research on sibling relationships has focused on young children. Interviews with children, therefore, have not been commonplace. However, Stillwell and Dunn (1985) did conduct interviews with 6-year-old subjects. In these interviews, children were asked to describe and talk about themselves, their family, and their friends. Among interview items were three that were concerned with siblings (i.e., "Tell me about your brother/sister," "What do you really like about your brother/sister?" and "What is it you don't like about your brother/sister?"). Responses were coded, and numbers of positive and negative

utterances were calculated. Child responses quantified in this way significantly correlated with some, but not all, other measures (e.g., child responses correlated with maternal interviews). These results suggest that children of this age and certainly older may add significantly to the total picture of the sibling relationship.

Rating Scales

Some researchers have utilized various types of rating scales in order to measure perceptions of the sibling relationship. Unfortunately, none of these scales is commercially available, which makes them inaccessible to others attempting to measure similar sibling relationship aspects, and makes it difficult to determine the quality of such measures used. Nevertheless, scales for use by parents and children have been developed for use in research projects.

In their study of children's reactions to the birth of a sibling, Nadelman and Begun (1982) used the Child Behavior Questionnaire as a measure of parental perceptions of their children's behavior. This instrument consisted of two parts. The first was a series of eight open-ended questions regarding firstborns' attitudes toward their mothers' pregnancy and postpartum behaviors displayed by the older sibling. These reponses were scored by the investigator using a 5-point behavioral rating scale. The second part required the mother to rank 26 items of her child's behavior using a 5-point Likert scale.

The Sibling Relationship Questionnaire (Furman & Burmester, 1985) is a child report instrument that has been used with children in fifth and sixth grade. The scale is designed to measure children's perceptions of their relationships with siblings in several domains: relative power/status, warmth/closeness, conflict and rivalry. These domains are represented by 15 scales (e.g., nurturance by sibling, companionship, competition, parental partiality for sibling), each consisting of three items. Siblings respond to items using a 5-point Likert-type scale.

Although no commercially prepared measures of sibling relationships exist, there are norm-referenced instruments available for assessing certain aspects of siblings. For example, as many researchers have tried to get away from looking only at the effects of sibling status variables on sibling interaction, many have begun to investigate how child temperament affects the developing sibling relationship. Some investigators have relied upon interview data with mothers for information about children's temperaments (Dunn & Kendrick, 1982b), but it can also be advantageous to use commercially available measures of temperament. For example, Brody, Stoneman,

and Burke (1987) used the Activity, Emotional Intensity, and Persistence subscales from Martin's (1988) Temperament Assessment Battery. If the researcher/clinician is interested in normative temperament information, such instruments may be preferred over research-project-developed rating scales and/or interview items.

Comparison of Methods

There are several approaches to measuring sibling relationships, each of which have specific strengths and weaknesses. The following is a comparison of the methods discussed previously, focusing on practical aspects of the methods.

Observations are excellent ways to capture actual observable behaviors that occur, from the perspective of a relatively unbiased observer. However, outside observers are not available during all interactions, hence they will not be privy to all that occurs. Additionally, Dunn et al. (1990) found that negative or agonistic behaviors occurred at such a low frequency that a sufficient sample of such behavior was not collected during an observation period of 30 minutes. These authors therefore suggested that if the focus of the observation is conflict or negative behaviors, observation periods of longer than 30 minutes should be used.

It is also quite possible that subjects' behavior in the presence of an outsider may not be representative of typical behavior. This problem may be mitigated by paying a visit to the family at least once before the observation session, and/or by not recording behaviors of family members until at least 10 minutes after arrival for the observation visit (Dunn & Kendrick, 1980).

Interviews with parents give information that may not be observable or accessible during observation sessions. They do, however, require retrospection on the part of parents, which may result in decreased accuracy. Stewart et al. (1987) resolved this problem in part by having two interviewers question each parental report of a problem to make sure it was a new problem. Despite the bias of parents, Dunn et al. (1990) found that maternal interviews had high test-retest reliabilities. They suggested that this could indicate either that mothers' perceptions of the sibling relationship are relatively stable, although not necessarily related to the children's actual behavior, or that the child behaviors that were the focus of the interview were stable. These authors also found that mothers' reports agreed with brief observations of children's interactions, suggesting that reports given by the mothers were relatively objective.

Child ratings also have their strengths and weaknesses. Such perceptions are strong because they include interactions that occur in

a broad variety of social contexts, many of which are not accessible to outside observers. These ratings are not objective, however. Furman and Burmester (1985) suggested that they are "affected by the children's memories, their interpretation of events, and their willingness to report their actual perceptions on a questionnaire" (p. 456).

Which type of data to collect may depend on the focus of the assessment (Dunn et al., 1990). For example, if the researcher/clinician is interested in considering the global behavior of both older and younger siblings, maternal interviews and unstructured observations may be useful. If interested in a specific aspect of the relationship, however, certain situations may be set up to elicit the types of behaviors that are the focus of study. For example, if interested in assessing directive or controlling behavior, the investigator/clinician may set up a task-like situation, especially one at which the younger sibling is not competent. In general, it appears that the measurement of sibling relationships needs to incorporate data collected from a variety of sources and in a variety of contexts in order to get a broad array of information that can be incorporated into a global picture of the relationship.

Though not comprehensive, this review has examined the most common methods of measuring sibling relationships, focusing on those thought to be most useful for researchers and practitioners. Each of the methods provides its own type of information that varies according to such variables as the perspective taken, the degree of retrospection, and the level of inference required. The best estimate can likely be obtained from a multimethod assessment that focuses on the type of information sought.

CONCLUSION

Whereas it was formerly believed that the influence of families on children's behavior could be investigated by examining parent-child relationships, this is now generally considered insufficient. Siblings are influential in children's lives, and as such should not be ignored when studying children and families. Behavior geneticists have shown that siblings often shape each other's behavior. Family systems theorists posit that because of the reciprocal influence of all family members, families cannot be fully understood without a consideration of the sibling subsystem.

The research reviewed in this chapter suggests that the sibling relationship is a complex one, with siblings playing a variety of roles for each other. The research also supports the view that family status variables play a very limited role in sibling behavior. Therefore, in

order to learn about sibling relationships, researchers/clinicians must assess family interactions and dynamics via a multimethod assessment that focuses on the inclusion of all family members.

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